DOCUMENT RESUME

ED 442 261 EF 005 730

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TITLE	Why Optimal Learning Environments Matter.
INSTITUTION	Mississippi State Univ., Mississippi State. Educational Design Inst.
PUB DATE	1999-12-02
NOTE	7p.; Keynote speech delivered at the Annual Meeting of the Alaska Chapter of the Council of Educational Facility Planners, International (Anchorage, AK, December 2, 1999).
AVAILABLE FROM	For full Text: http://www.edi.msstate.edu/optimal.html.
PUB TYPE	Opinion Papers (120) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Educational Facilities Improvement; *Educational Quality; Elementary Secondary Education; *Public Schools; *Social Development; *Student School Relationship
IDENTIFIERS	*Learning Environment

ABSTRACT

A presentation examines the empirical research on the quality of children's social and educational experiences in educational environments and discusses why the public should be concerned with providing optimal environments for learning. It explores what an optimal learning environment is and provides its five attributes, including its ability to foster strong formal and informal leaders where teachers are treated as professionals; its ability to be learner-centered; and its being created and sustained through parental and community attention, collaboration, and partnerships. (GR)

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WHY OPTIMAL LEARNING ENVIRONMENTS MATTER

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December 2, 1999

Available at:

http://www.edi.msstate.edu/optimal.html

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Why Optimal Learning Environments Matter

Jeffery A. Lackney R.A., Ph.D.

Keynote Presentation, Annual Meeting of the Alaska Chapter of the Council of Educational Facility Planners, International (CEFPI), Anchorage, AK, Thursday, December 2, 1999

Ladies and gentlemen, colleagues and guests, I am honored to providing some opening comments to your regional CEFPI conference.

Children spend up to 24,000 hours within the walls of the school building. That amounts to about 15% of a child's entire life up to age 18. For all intensive purposes, the school in the last century has become a central place of memory for us all. If you're like me you still have nightmares about test taking! School experiences have become central players in the formation of our social selves.

What is the quality of our childrens' social experiences in these environments? What is the quality of their academic experiences in these places? And does it matter that we concern ourselves with providing optimal environments for learning? Do optimal environments really matter?

The first question often asked is whether facilities really matter to education. First let's take a hard look at what the research tells us.

What does the empirical research tell us about the role of the physical environment in learning?

We know from the current state of educational research that there are no within-school variables that have a direct impact on a child's learning other than time-on-task. We also know that quality of student-teacher interaction, teacher quality and school leadership can have a potential impact.

Significant findings in class size and school size research appear to have an influence on student achievement. School and class size research findings are making significant headway in the policy arena, as they should. However, educational research points to social factors as having much more of an influence on learning than physical factors. The result is that physical factors are ignored in educational planning.

Further de-emphasizing the value of school facilities in education is that research findings concerning parental involvement appears to matter much more than all these within-school factors combined. Does this mean we should send our students home, have them tune in to WebTV, and call it a day? No, of course not. Not all families are involved in their childrens' education to the same degree and a large percentage of children often come to school unprepared. Clearly, schools do have a responsibility of nurturing parental involvement, and they can do this by making schools more inviting to parents.

Research aside, however, when we ask whether facilities really matter in education, the most popular answer often given is that yes, of course facilities do make a difference, and therefore we should give attention to the quality of facilities. The intrinsic rights of children and the symbolic messages buildings project about the value we place on childhood must be invoked.

What then is holding us back from providing optimal learning environments for kids?

I don't believe it's a matter of conflict between research evidence and intuitive arguments. I think it may have more to do with our values concerning education generally. Have you ever thought it curious that the national teacher unions advertise for the value of teachers in our society on television during prime time no less? Why is it that the U.S. consistently experiences teacher shortages? It is my belief that our society, at present, doesn't value

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teachers, and perhaps children not much more so. We seem to be more concerned with the performance of our retirement plans than we are the performance of our children.

The pragmatic answer of course is that we have to compete for scarce resources. There are many competing needs among a plethora of institutions in our society. When we look at the needs of schools we must again balance an enormous array of concerns, from teacher quality and salaries to special mandated and voluntary educational programs. Facilities are often far down the list.

The cost of facilities modernization is often an issue of perception. As design professionals are aware, the life-cycle costs of school facilities are the fraction of the costs associated with the entire operating budget of a school or school district. The solution engaged by larger school districts is of course to spread out maintenance and construction costs over time to accommodate this perception, but even this has not historically eliminated the need to focus on large school construction projects requiring public commitment of funds.

What can we as design professionals and school facility experts DO to show WE care? What is OUR role in this debate on schools? I think it is our responsibility to educate the public of the value of providing optimal learning environments. We all agree that optimal learning environments matter. However, we all might think differently about what we think an optimal learning environment is. Some citizens think an optimal environment is one just like they were in as a young person. Some of you might think there are few if any truly optimal learning environments in existence. Other well-meaning citizens think there is nothing wrong with having thirty-year old portable classrooms.

What is an optimal learning environment?

Let me answer that by providing you with what I believe to be a list of five attributes that I believe contribute to an optimal learning environment. These attributes are the outline of the message I think we should be repeating. The central theme throughout these five attributes is the need to talk about facilities and educational goals simultaneously. What do I mean by this?

It's not enough to say we need to "fix our schools that are crumbling. The problem with this message is that is not tied closely enough with educational enterprise itself – to the need to support parental involvement, teacher quality and student achievement. What does an organized pile of bricks and mortar have to do with kids learning about their fractions? A "non-crumbling" building may be "adequate", but it does not necessarily make for an optimal learning environment!

And then there's that word "adequate". In our state of Mississippi, the legislature overrode the Governor's veto of the Mississippi Adequate Education Act of 1997 – an historic piece of legislation for Mississippi schools. Over $500 million dollars has been distributed to the 150 plus school districts in the state to improve facilities so far. "Adequate" Education – that was the vision. One of the leading school architects in the state told me that his clients could not afford "vision" – that they were just surviving. When did "vision" start costing something! It seems everything in our culture must be boiled down to bottom-line cost! I know of a superintendent in a Mississippi Delta school district with a rich vision for his kids, he is implementing his vision one step at a time by whatever means necessary. He knows that vision takes leadership, and that the money will follow.

We need to make the argument that creating optimal learning environments improves the education process directly, actively and can motivate students to enjoy the process of learning, teachers to facilitate learning, and administrators to be leaders of learning. Optimal learning environments are by definition MOTIVATIONAL places, they do more than support activity, they create new possibilities for learning. Optimal learning environments by definition go beyond the functional to the INSPIRATIONAL.

We know that our school buildings need fixing, but so does our public educational system. We are at present caught between the right and the left, the progressive and the traditionalist, the public and the private. In fact, if truth be told, this political reality has been with us since Horace Mann. This politicization of our educational system only masks deeper changes taking place in our society that we are only beginning to understand.If we are to believe future forecasts concerning the educational system, we are probably in for some big changes. While we are making great strides in educational facility planning, for the most part, educational systems are still building citadel-type, cookie cutter, factory model schools throughout this country that do not take into

consideration the potential for these big changes on the horizon.

So, here are five interrelated attributes of an optimal learning environment. I characterize an optimal learning environment as community-based, leadership-dependent, learner-centered, intelligence-embodied, and performance-oriented.

1.Optimal learning environments are created and sustained through parental and community attention, collaboration and partnerships.

In the final analysis, schools exist for the community. The community is the true client of the school. Schools need to respond to the concerns and expectations of the community, not barricade themselves from the community for fear of change.

What can we do? Site school buildings within the neighborhoods they serve. This will promote a healthier community exchange. Allocate new and existing spaces within the school that foster interchange and dialogue by providing parent information centers, opening up the media center for public use, and in short, allowing the school to be a place of community life-long learning. We all know about these design strategies. However, a few civic architects and urban planners are starting to go further by advocating for schools as being a part of a larger, more important "network of learning" that integrates both public and private organizations and institutions throughout the community.

2. Optimal learning environments foster strong formal and informal leaders where teachers are treated as professionals.

Positive educational leadership is the catalyst that encourages a positive school climate. Leadership often means delegating responsibilities. In the case of schools, teachers must be a part of the leadership team.

What can we do? Provide private workplaces for teachers, away from students, for them to be creative and engage in personal inquiry, and to plan learning activities. Teacher workrooms need to be transformed into teacher studios that include private workspaces, teaming spaces and areas for private reflection.

3. Optimal learning environments are learner-centered (not teacher-centered, or administrator-centered.)

Ultimately, optimal learning environments are about learning – not about supervision, lock-down, or controlling behavior in the classroom. Teaching and administration are simply support functions to the central task of learning. Places for learning need to be supportive of a variety of learning modalities. Research literature in the cognitive sciences suggests that students learn at different paces and have different learning styles. Today's non-optimal learning environments are designed instead for homogeneity.

What can we do? These findings imply that there must be a variety of learning places within the school: some large for group learning, some small and intimate for private reflection, some filled with information technology, some completely open for experimental learning, some indoors, some outdoors.

4. Optimal learning environments are developmentally-appropriate and encourage positive social behaviors and reflect intelligence.

No one would doubt that child-scaled and familiar user-friendly spaces are more pleasant and comforting for children. A balance of familiarity and novelty to provide an optimal level of environmental stimulation needed to encourage exploratory behavior is critical to the healthy physical, social and cognitive development of children. There is some evidence that 'soft' classrooms are related to higher levels of voluntary participation and that overall aesthetic quality in educational facilities may be related to students' task persistence.

What can we do? The size and scale of the building, its exterior elements and its interior spaces, make it possible for children to use spaces independently in a manner consistent with their evolving developmental capacities. For child-centered spaces, elements and spaces can be smaller and heights lower to accommodate children. Minimize the institutional character of buildings by creating more intimate spaces. Use natural materials and colors, a variety of forms and textures, vernacular elements, and extensive landscaping to create interesting and engaging spaces. Comfort for both children and teachers will require some compromises between child, youth, and adult-scales. As students get older, social and cognitive developmental needs increase in importance. Design a school as a three-dimensional textbook using the physical features to teach as suggested by Dr. Ann Taylor at the University of New Mexico.

5. Optimal learning environments support student performance and academic achievement.

School systems often take for granted that certain factors if taken care of will lead to improved student performance. They must rely on improving teacher quality, class size and leadership for instance assuming these factors will in fact improve performance.

Having an optimal learning environment also means having an on-going facility management and facility leadership strategy to sustain its optimal use.To claim any causal links between a specific facility and learning taking place in that particular facility would seem on the outset highly controversial and suspect. The question is not, what impact do educational facilities have on student learning, but rather, what impact is THIS facility having on THESE students' performance, and by improving THIS facility, how specifically can THIS GROUP of students' performance be improved?

What can we do? With the assessment tools we have today we may not be able to answer this question with the precision we might like. However, the idea of linking indicators of facility performance with indicators of human performance is not new. A model for this has already been developed in the business world and is known broadly under an umbrella of tools, techniques and procedures called Total Quality Management or TQM. TQM uses a variety of tools to measure performance. One useful tool for our purposes is that of benchmarking. Instead of concerning ourselves with generalized standards, we might instead look at patterns that emerge in data collected over time from which to make design decisions linked to performance.

Concluding Remarks

Of course we should care how our schools represent our commitment to the long-term viability of the community. Of course we should care for the sake of the basic physical and social needs of children. Of course we should care about how this cultural artifact, the school building, represents our commitment to children and how it effects the self-concepts and self-esteem of children. Of course we should care about our commitment to parents in the community who expect only the best for their children.

It would be nice to lay out a convenient economic argument for why we should care. Something about how poor academic achievement is hurting our US economy and productivity, how increasingly, more and more worker training must be conducted outside of school settings in work settings. One commentator on National Public Radio (NPR) suggested that Chris Whittle, owner of the Edison Project, was arrogant in thinking he and his private company could make a profit from better managing public school systems. The commentator reminded his audience that public schools are saddled with fixed costs and that schools were never intended to be profit-centers. Yet, despite the fact that the Edison Project has never posted a profit in five years, their stock now sells for $21/share on the open market.

But, in the final analysis, I don't think it's an economic argument, but rather a humanist argument that will carry the day. As Jonathon Kozol states in his book *Savage Inequalities*, "the point is that all the school reforms on earth are worthless if kids have to come to school in buildings that destroy their spirits." Kozol and other social critics have expressed their belief that "the notion that the schoolroom is secondary to the schooling is used as an excuse for pushing the issue of crumbling buildings far down the education agenda."

I'll conclude by suggesting that all these reasons I've stated above may be nothing but rhetoric if they are not

backed up with a willingness to conceive, plan and construct equally authentic optimal learning environments for all children in our society. We are making some progress in pockets of our country. It's not all gloom and doom. But, it is also clear that we have a long way to go to providing the means for attaining these five attributes of optimal learning environments that we all know so badly needed.